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ABSTRACT

A course description and syllabus are provided for "Integrated Humanities," a general education course taught at Northern New Mexico Community College to provide students with a solid, reliable knowledge base and framework upon which to build future educational experiences. Following introductory material, a syllabus for students is presented, reviewing course strategies and goals, the instructor's expectations, and grading policy. The syllabus provides descriptions of 30 week-long units structured around an academic lecture and a related activity designed to illustrate the relationship between the lectures and actual life experiences (e.g., recording the moon's phases, making an obsidian blade, visiting a subculture, deducing the grammatical structure of an artificial language, and designing a fallout shelter). The units are: (1) Matter, Time, and Scale; (2) Molecules, Emergent Properties, and Life; (3) Ecology without Man; (4) The Enormous Gap (between apes and humans); (5) Ice Age Man; (6) The Domestication of Plants; (7) The Fundamentals of Civilization; (8) Greeks and the Power of Philosophy; (9) The Glory of Greece; (10) Jews, Romans, and Christians; (11) The Dark of Europe and the Light of Islam; (12) Medieval Europe; (13) The European Discovery of Greece; (14) Eras in Conflict--Cortez vs. Montezuma; (15) Reason, Romanticism, Revolution; (16) The Industrial Revolution; (17) War and Technology; (18) Medicine and Population; (19) Epistemology; (20) Society and Its Power; (21) Alienation and Culture; (22) Madness, Mysticism, and Magic; (23) Math and the Description of Reality; (24) Language, Communication, and Social Reality; (25) Literature as Mirror; (26) Form and Design; (27) Visual Art and Self-Expression; (28) To Dance and Sing; (29) All the World's a Stage; and (30) The Future. Each unit description includes 10 new terms for students, and suggestions and explanations for the instructor. (PAA)

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Integrated Humanities: A participatory course for a multi-cultural environment

March 19, 1991

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INTRODUCTION

A Humanities 101 teacher enters a typical community college classroom on the first day of the semester. Seated before him is a small group of people from a variety of cultural backgrounds. They range in age from teenagers to senior citizens, and have educational skills varying from elementary to graduate level. If the teacher really intends to educate each of these students, he knows immediately he's in trouble. Anything he does is likely to be appropriate and valuable to some students, but useless for others. Finding a single teaching strategy that will be successful with all or even most of the students is not going to be easy. However, in his favor is the knowledge that each one of these students has, for his own reasons, volunteered to be there. Each has decided that he will submit to the process of education for at least a few days. So the opportunity is there if the teacher can overcome the difficulties. This report is the reaction of one teacher to such a teaching challenge. I present it in the hope that it will provide ideas and encouragement to my colleagues who year after year have struggled with equally or even more desperate situations.

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What follows is a syllabus for a course entitled *Integrated Humanities* that was taught at Northern New Mexico Community College for 3 years. The student population was about 70% from the long established Hispanic community of the mountains of northern New Mexico, about 10% from the pueblo Indian tribes along the Rio Grande, and 20% from the locally defined "anglo" community consisting of diverse ethnic origins, including some African-Americans. The social class structure intersected this cultural diversity such that the anglo group was primarily lower middle class, the Hispanic group mostly upper-middle class, while from my cultural perspective the American Indians were essentially classless. The course was a two semester sequence, with each semester worth 3 credits. It satisfied a college-wide 6 credit humanities requirement. However, since a very wide variety of alternative courses would also satisfy the requirement, enrollment could be restricted to 25 students per semester, with entry allowed at either semester.

The course in its current manifestation is the result of 4 years of iterating a plan-teach-modify cycle. During that process considerable experience was gained as to what features were successful, how they needed to be presented, and how recurrent problems could be avoided. In order to communicate this experience, the syllabus has been extensively annotated with helpful hints and explanations (shown in italics) of the underlying purpose of particular features that might otherwise be obscure. Many of the particulars of this course are rooted in the particulars of the local environment and would have to be modified to apply to other areas of the world. Therefore, I have also added to the syllabus some suggestions for how similar effects could be achieved in different geographic locations.

Syllabus
Integrated Humanities I & II

The goal of this course is to provided an interesting and valuable general education for all students, regardless of their cultural, personal or academic background. Grading is done on the basis of participation, not tests. Very little reading, writing, or movie watching is required. Learning occurs as the result of active involvement in new experiences. The emphasis is on the basic, fundamental, non-controversial knowledge that is shared by all educated people.

The underlying goal of this course is to create in the mind of the student a lattice or framework of solid, reliable knowledge to which future educational gains can be attached. The rationale is that students who lack a certain critical mass of correct information, cannot assimilate new information into a preexisting knowledge structure, and therefore cannot properly benefit from supposedly educational experiences. This

in turn fosters a habit of avoiding exposure to information which cannot be readily assimilated, thus further increasing the students educational disadvantage. All of these problems are more starkly emphasized for the student who comes from a minority culture, since much of the information available in the majority media is packaged in a culturally biased way, which further reduces its accessibility.

There are 30 units, each lasting one week, and each consisting of a lecture, a participation task and sometimes a discussion. Each lecture is centered around a basic idea and will use and explain 10 terms that are listed in the syllabus. Each task specifies a behavior that must be done, and a *specific* procedure that will prove the task was actually completed. Discussions will be centered around a set of questions, and every student must comment on every question.

The main educational event in this course is the activities that the student participates in. The lectures are designed to give some abstract, intellectual ideas, which are then immediately related to actual experiences of the student during the task. The discussions are designed to practice the behaviors of educated people engaged in discussions of ideas. They are supposed to demonstrate to the student that he can can successfully manipulate the concepts he is learning, and thereby adjust them to fit into his already existing informational structures.

TO THE STUDENT:

This course is unlike any you have taken before. It seeks different goals, uses different methods, and measures success in a different way. Your personal success in this course will depend on your ability to understand, accept, and master the requirements. After you have looked at the syllabus, you should decide if this course is what you want. If not, you should drop it as soon as possible.

The basic plan of the course is that each week you will hear a lecture on an academic subject and will then participate in a related activity. Since the activities are similar to the things you would normally do, I hope you will be able to see a relationship between the knowledge presented in the lecture and actual life experiences. As you complete the assigned tasks, you will be achieving an important goal of education: the use of formal knowledge to enrich and improve the quality of daily experience. Further you should see that knowledge is a useful tool to gain control over the problems that confront you.

In the selection of topics I have tried to construct a fundamental system of knowledge. I have obviously slanted the class toward the situation in northern New Mexico, but I believe this system would be understood and accepted by educated people in every culture in the world. If you learn each of the basic ideas, and all of the 300 terms, you will have an interrelated system of knowledge that will help organize everything you currently know and everything you will come to know. However, this

course is only the bare bones of a body of knowledge. You must flesh it out as you continue with your education. Anyone can choose to become an knowledgeable, educated person. Those who do will benefit through a longer, happier and healthier life. Those who do not usually become the tools of those who do.

I find that beginning this class by congratulating the students on their wisdom in choosing it is helpful. I explain that level of education correlates positively with all kinds of good things from lifetime earnings to orgasms per week, and negatively with bad things like number of cavities and years in jail. Surprisingly, in our region, and I suspect in others, students often associate education and thinking with negatives like insanity, unpopularity, and depression. They often hope to avoid these problems by remaining ignorant. I explain that while education will not fully protect them from such problems, it does not make them worse. The key point is to convince the student that he has made a wise choice, and he should admit his good judgement, and accept the changes in himself that the course is designed to make.

GRADING POLICY:

Grades are assigned on the basis of participation in class activities. There are 15 units to be completed each semester. Each unit has a 50 minute lecture (given each Tuesday), and a participation task. In addition, 5 units each semester have an associated discussion group, which meets on Thursday.

Grades are assigned as follows:

GRADE	LECTURES ATTENDED		TASKS COMPLETED		DISCUSSIONS ATTENDED
A	14	and	14	and	4
B	13	and	13	and	3
C	12	and	12	and	2
D	11	and	11	and	1
F	10 or less	and	10 or less	and	0

There are no allowable excuses for nonattendance. If your attendance falls below an acceptable grade level, you should drop the course and attempt it again next year. Every effort will be made to provide the tools and instruction necessary for task completion at several convenient times during the week. It is the student's responsibility to fit his schedule into the available times. Good Luck!

If you are tardy for lecture 3 times is will count as 1 absence. A tardy is defined as not answering when your name is read during roll call, or as leaving the lecture hall before the lecture is completed.

If you have any problems or concerns please bring them to Dr. Thomas, who will help you find a solution.

This grading policy was a very important and very successful part of the course. Its success depended on a strict adherence to a technical and legalistic interpretation of the rules, which were frequently reviewed for the students. What is rewarded here is consistency and willingness. Cleverness and traditional academic skills will not help, only persistence and the courage to attempt new things will lead to both a good grade and an intense learning experience. This procedure totally shuffles the normal "quality" ranking of the students and gives each student a fair and equivalent opportunity at a good grade. However, achieving a good grade is not easy, and each semester a fairly typical grade distribution was attained, with maybe a few more A's than usual and a few less C's. This required that all *excuses were rejected — including illness, accident, and family crises.*

This policy caused the most difficulty with the rest of the faculty, yet I believe the course would have failed without it. The idea was to make it difficult to get a good grade, thus providing motivation and a sense of accomplishment, while still giving each student, regardless of his educational or cultural background, an equal opportunity to excel. Furthermore, this policy removed from the class the pressure of being evaluated according to some culturally biased standard during the task performance. This was a liberating experience for many students, who could now participate without the threat of failure.

UNIT 1: MATTER, TIME and SCALE

Basic idea: Humans live on the Earth, which is a planet, in the solar system, in a galaxy, which is a small part of the physical universe. Everything in this universe, which is much older than the earth, obeys the same physical laws.

Terms: 1) atom, 2) gravity, 3) energy, 4) light, 5) electromagnetic radiation, 6) planet, 7) star, 8) galaxy, 9) supernova, 10) big bang.

Task: Choose one of the following:

1. Record the moon's phases over one cycle.
2. Locate and observe the Andromeda galaxy.
3. Observe Saturn's rings.

Notes: *Recording the moon's phases, while fairly difficult, does show that the universe is a lawful place that can be understood with effort. Observing Andromeda, with or*

without binoculars, is easy if you know where to look, yet it demonstrates that careful observation of inconspicuous things will reveal secrets of the universe. Observing Saturn with a small telescope was the most successful task, perhaps because it is readily comprehensible, yet invokes a sense of awe and wonder in the students. However, Saturn may not be visible during the semester so a recourse to the alternatives is provided.

Unit 2: MOLECULES, EMERGENT PROPERTIES, AND LIFE

Basic idea: The properties of matter emerge from its organization. Atoms, which are the basic elements of matter, combine into molecules and molecules combine into macromolecules. DNA is a macromolecule from which the properties of life emerge. Natural selection operates on the DNA, and evolution results. Cells, all of which contain DNA, are the basic units of life. Between-cell organization creates plants, which feed on light, and animals, that feed on life. Reproduction and death are characteristic of evolving life.

Terms: 1) atom, 2) molecule, 3) DNA, 4) cell, 5) organelle, 6) evolution, 7) sexual reproduction, 8) death, 9) fossil, 10) clone.

Task: Observe and draw the feeding behavior of rotifers.

Notes: *Since rotifers are among the smallest multicell animals, this task should demonstrate the enormous size and complexity of human beings – while simultaneously showing that much of the living world is too small to be seen. This should suggest that the reality is larger than that which is apparent from effortless observation.*

Rotifers were selected because, while by no means rare, they require some effort to locate and identify. Furthermore they are almost constantly feeding with their characteristic rotary motion, which provides both a convenient feature to confirm the identification and demonstrates that all life, no matter how small, faces similar problems of survival. Rotifers can be easily found in any water containing a healthy alga growth. Be sure to include in your sample lots of alga, because that will provide the complexity of life forms that will lead into the next unit.

Unit 3: ECOLOGY WITHOUT MAN

Basic idea: Ecology is the study of properties which emerge from the interaction of all parts of a complex biological system. All living forms in the system have sensory and movement capabilities that help control their interaction with the environment. The nonliving parts of the system are altered and changed by interaction with the living

parts. From this complexity stable ecological systems emerge that have identifiable characteristics. The local area contains several different recognizable ecologies, each of which is a complex creation of life.

Terms: 1) ecology, 2) species, 3) natural selection, 4) extinction, 5) wilderness, 6) carnivore, 7) herbivore, 8) prairie, 9) tundra, 10) pinon-juniper forest.

Task: Observe 5 different species of birds around the campus. Then produce a list which contains for each species the Latin name, the standard American name, the local name, the location where seen, and the type of food that species eats.

Notes: *This exercise will illustrate the value of naming in organizing and intellectually understanding nature. It should also point out that each species is specialized for a specific ecological niche. We loaned binoculars and bird guides, and found that a short 10 min explanation of how to use each was essential. It was helpful to have an experienced birdwatcher accompany the students, providing he guided them to the identifications, rather than just telling them the correct name.*

In the list of terms the names of ecological systems found in your local area might be substituted for the terms I have included, such as oak woodland for pinon-juniper forest.

Unit 4: THE ENORMOUS GAP

Basic idea: Man is an animal evolved within an ecological system, but from his large brain new properties and new interactions with his environment emerge. While human evolution shows no remarkable gaps, evolutionary changes in brain size are significant and these produce spectacular differences between man and the other apes.

Terms: 1) primate, 2) ape, 3)Ramapithecus, 4) Australopithecus 5) Homo erectus, 6) Homo neanderthalensis, 7) Homo sapiens, 8) stone tool, 9) savanna, 10)cortex.

Task: See the film 2001 and write an explanation of the symbolism of the monolith.

Notes: *This film, which is readily available on videotape, directly addresses the idea of a gap between man and ape. The purpose of the essay is to force an awareness of artistic symbolism and, hopefully, make a denial of man's ancestry more difficult.*

Unit 5: ICE AGE MAN

Basic idea: Mankind developed complex culture during the ice ages, spread over the entire world, and lived in an environment very different from today's. Ice age people made efficient tools, produced excellent art, and began a primitive science. People

were healthy, tall and mobile.

Terms: 1) glacier, 2) mastodon, 3) Clovis man, 4) hunter-gatherer, 5) cave painting, 6) culture, 7) Folsom point, 8) ice sheet, 9) domestic dog, 10) sexual dimorphism.

Task: Make an obsidian point with the pressure flake method — or bleed during the attempt.

Notes: *A chunk of obsidian can be found at any rock shop. With a geologic hammer I flaked some reasonably sized pieces off the core before giving them to the students. Safety Goggles are essential for everyone! Pressure was applied to the edges of the pieces with a 16 penny nail, thus flaking off a small piece. Choosing where to flake shapes the tool. Cotton gloves prevent cuts, but make the task more difficult. Most students elected to skip the glove, cut themselves and escape the task with a drop of fresh blood. This was pleasing to the students, because it proved their courage and helped them bond to the group. Furthermore, it shows that all technologies contain risk, and that stone tools are not dull tools.*

I considered a pictograph task, but decided that would have overemphasized the importance of art in the ice ages.

UNIT 6: THE DOMESTICATION OF PLANTS

Basic idea: Mankind learned to control the ecological system in which he lived by manipulating the genetics and biology of plants. This produced a sudden increase in wealth and population, which are the necessary foundations of civilization. Agriculture is a recent invention in man's history and it produces ecological disaster for most species of life.

Terms: 1) genes, 2) artificial selection, 3) corn, 4) rice, 5) wheat, 6) irrigation, 7) herding, 8) social organization, 9) neolithic, 10) village.

Task: Explore an archeological site, looking for evidence of agricultural, housing and ceremonial sites. Draw a map of the site you explore or produce a photograph of yourself in the process of exploration.

Notes: *In our region there are lots of good Pueblo Indian ruins. The one I recommend is Tsankawi, because it is unexcavated yet understandable. However, in other regions colonial sites, American Indian burial sites, or pioneer sites will serve as well.*

The drawing is actually the more educational of the two tasks, but posting the snapshots i in the classroom was so popular I continued to allow it.

Unit 7: THE FUNDAMENTALS OF CIVILIZATION

Basic idea: All civilizations have features in common, including complex religion, advanced science, sophisticated engineering, military organization, control of more primitive people, written language, and complex hierarchical bureaucracies.

Terms: 1) Aztec, 2) Egypt, 3) Babylonia, 4) Indus Valley, 5) Inca, 6) calendar, 7) hieroglyphics, 8) cuneiform, 9) bureaucracy, 10) priesthood.

Task: Be able to illustrate on a globe the geographical ideas: pole; equator; continent; ocean; island; peninsula; and sea. Be able to identify the geographical location of each civilization discussed in the lecture, and be able to point to the following geographical features:

Continents	Oceans	Seas	Mountains
North America	Pacific	Caribbean	Rockys
South America	Atlantic	Mediterranean	Andes
Africa	Indian	Red	Alps
Australia	Arctic	Black	Himalayas
Asia		North	
Europe			

Countries	Civilizations	Rivers	Cities
Iraq	Mesopotamian	Tigris	Baghdad
Peru	Inca	Euphrates	Lima
Mexico	Aztec	Amazon	Mexico City
Egypt	Egyptian	Nile	Cairo
China	Chinese	Yellow	Beijing
India	Indus Valley	Indus	New Delhi
Israel	Roman	Jordan	Jerusalem
Germany	Greek	Rhine	Paris
England		Danube	Athens
USA		Mississippi	New York
USSR			Moscow
Italy			Rome

Notes: ***This task is supposed to provide a basic geographic framework to which other bits of knowledge can be attached. Task completion is defined as being able to locate every item on the list, with no errors. In order to accomplish this with all students, the test should be repeated as often as necessary with different samples of the possible questions. In order to make the testing manageable, a minimum of 3 globes will be necessary.***

Unit 8: GREEKS AND THE POWER OF PHILOSOPHY

Basic idea: The rational, logical, orderly search for truth leads to knowledge that, in turn, is used to create the tools and techniques that produce power. Greek civilization was the first to systematize this search for knowledge, thus inventing philosophy. They also placed mathematics on a firm foundation by showing that logical, rational thought could also be used to prove whether mathematical statements were true or false.

Terms: 1) Socrates, 2) Plato, 3)Aristotle, 4) Euclid, 5) Ptolemy, 6) logic, 7) proof, 8) theory, 9) lyceum, 10) syllogism.

Task: Use Euclid's method to prove the Pythagorean theorem is absolutely true. Then, through the use of measurement and the calculator show that in real applications it is only approximately true. Try to argue that the theorem is true even if no triangles existed.

Notes: *This is the key lecture in the course. It is here that an explanation of the power of Western civilization is begun. The relationship between thinking and knowledge, and between knowledge and power must be forcefully presented, so the student will recognize the cost of choosing not to think logically.*

Many geometry books have Euclids proof, which takes about an hour and a half to really get all students to understand it. For some students another hour with a tutor is necessary, but every student can understand the proof — after he puts in the effort. It is the effort which is educational, not the result. In the interest of time, I have allowed the argument required in the last part of the task to be made in discussion sessions, but I insist that each student contribute to the discussion. This insures that the possibility of an alternative, ideal reality, accessible only through thought, is at least considered.

Unit 9: THE GLORY OF GREECE

Basic idea: Cultures can flourish for a time, have profound effects on all other peoples, and then fade away. The Greek cultural milieu, which featured city states, political variability, exquisite architecture, pagan mythology, theatrical productions, frequent wars, Olympic Games, and active sea-based trade, provided the support for the spectacular intellectual achievements of Greek civilization. Alexander's conquests were the direct military application of Aristotle's philosophy.

Terms: 1) democracy, 2) city-state, 3) Alexander, 4) Parthenon, 5) Athens, 6)

Sparta, 7) slaves, 8) myth, 9) Zeus, 10) Olympic Games.

Task: Play a part in Sophocles' *Oedipus Rex.*

Notes: *A read through of the play is sufficient, but a good director is necessary to help the readers through the difficult language to the appropriate emotions. The director should stop and explain the plot as often as necessary.*

The students should realize that Greeks were not Christians, yet were religious, and that Oedipus intended no wrong, yet is guilty.

Unit 10: JEWS, ROMANS AND CHRISTIANS

Basic idea: The Romans were guided by their concept of fate and law, the Jews by their concept of god and progress, and the Christians by their concept of redemption and and the afterlife. The conquest of Greece and Palestine by Rome, the conversion of Rome to Christianity and its subsequent decline, provide the geopolitical context for the conflict between the three different world views.

Terms: 1) Bible, 2) Moses, 3) monotheism, 4) Constantine, 5) Christ, 6) eternal life, 7) sin, 8) Roman empire, 9) fate, 10) Julius Ceaser.

Task: Read part of the Old Testament aloud.

Notes: *A group session, led by someone who knows the Bible, in which the students read in turn, followed by some discussion is a good approach to this task. Many passages will do but I like: Genesis 1; Psalm 23; Proverbs 5; Exodus 12; Numbers 5; and Deuteronomy 22.*

The idea is to get something of the poetry, the history, the creation myth, the struggle of God vs. Satan, and the ethical teaching.

Unit 11: THE DARK OF EUROPE AND THE LIGHT OF ISLAM

Basic idea: The period from the defeat of Rome by the barbarians, through the conquests of Mohammed, up to the Latin translations of Arabic texts at about 1200, was dominated by the inventiveness and sophistication of Islamic civilization. Western Europe rejected its classical past and slowly developed a new church-centered, feudal society that we call Western Civilization.

Task: Color Arabic and Celtic designs.

Terms: 1) Vandals, 2) Byzantium, 3) Islam, 3) Mohammed, 4) caliph, 5) monastery, 6) Mongol, 7) algebra, 8) Alhazen, 10) Ibn Sena.

Notes: *There are several coloring books with these patterns available. It is important that the religious character of the designs is explained. Hopefully the concentration required to comprehend these complex patterns will produce some understanding of how art expresses a mystical conception of spiritual reality. Furthermore, the student should get some idea of the strict intellectual purity of Moslem monotheism by comparing the Christian and Islamic designs.*

After the colored drawings have been completed, I usually show a slide show of the originals in full color — not for the purpose of evaluating the student's efforts, but rather for stimulating a comparison of the modern style with that of older civilizations.

Unit 12: MEDIEVAL EUROPE

Basic idea: The people of medieval Europe constructed the Gothic cathedral as an architectural metaphor for the meaning of life. They believed that God had established a political and economic system, and that living within it would draw one's spirit upward to everlasting joy.

Terms: 1) chivalry, 2) feudalism, 3) El Cid, 4) crusades 5) alchemy, 6) jousting, 7) excommunication, 8) serfs, 9) chastity, 10) vassal.

Task: Visit our cathedral and draw a map showing he location of the bishop's throne, the 12 apostles, the cathedral school, the garden, the graves, and the hospital.

Notes: *The cathedral in your local See is by far the best location for some remnant of feudal society. However, the largest, oldest catholic church available will give something of the flavor.*

Maps, aside from forcing concentration on the layout of the church, are also very difficult to plagiarise. I warn the students that I can tell from their map if they have really been there, or have merely copied from a classmates map.

Unit 13: THE EUROPEAN DISCOVERY OF GREECE

Basic idea: The loosening grip of medieval Christian philosophy combined with the rediscovery of classical Greek and Roman culture to produce a spectacular change in European civilization.

Terms: 1) perspective, 2) humanism, 3) Machiavelli, 4) Leonardo Da Vinci, 5) Michelangelo, 6) Columbus, 7) Renaissance, 8) Venice, 9) Florence, 10) Galileo.

Task: Read Machiavelli's *The Prince* and write a summary of the major ideas in each chapter.

Notes: *This task illustrates the power of rational thought applied to political ends, and thus serves as a useful introduction to the next unit. However, many students viewed it has too laborious and choose it as the one task they could eliminate. Other students were forced to complete it when they missed the opportunity to do some other, less obnoxious, task.*

Unit 14: ERAS IN CONFLICT — CORTEZ VS. MONTEZUMA

Basic idea: Western civilization with its Jewish, Greek and Arabic roots, used its more developed war machine and its superior world view to defeat, colonize and exploit less developed, more insulated cultures.

Terms: 1) Cortez, 2) Montezuma, 3) Pizarro, 4) colonialism, 5) inquisition, 6) human sacrifice, 8) Indian 9) war galleon 10) pueblo revolt

Task: Vist the historical archives and view the documents of the Spanish conquest of New Mexico. Students should ask the curator to tell them the story of the battle of Acoma.

Notes: *This lecture should have the form of the story of Cortez vs. Montezuma; with drama, conflict, emotion and resolution. Hopefully, it will be a story the students will be able to repeat.*

The task is specific to New Mexico, but a visit to almost any historical museum will serve the same purpose. The idea is to see some actual physical evidence of the Western European domination of all other cultures.

Unit 15: REASON, ROMANTICISM, REVOLUTION

Basic idea: The last vestiges of the medieval system in Europe collapsed under the presure of increasingly widespread knowledge. Through great struggle, Europe experienced philosophical, economic, scientific and political progress of worldwide importance.

Terms: 1) human rights, 2) natural rights, 3) Locke, 4) American revolution, 5) Reformation, 6) Beethoven, 7) utopia, 8) French revolution, 9) Newton, 10) French philosophs.

Task: Memorize the following list of ages and dates which cover the period from the big bang to 1776:

	Approximate Time
Age of the Universe	15,000,000,000 years (15 billion years)
Age of the Earth	4,600,000,000 (4.6 billion years)
First life on Earth	3,500,000,000 (3.5 billion years ago)
First mammals	225,000,000 years ago (225 million years ago)
Ramapithecus	12,000,000 years ago (12 million years ago)
Australopithecus	4,000,000 years ago (4 million years ago)
Homo erectus	1,500,000 years ago (1.5 million years ago)
Homo sapiens	200,000 years ago (2 hundred thousand years ago)
	Approximate Date
First Agriculture	7000 BC
Egyptian Civilization	3000 BC
Greek Civilization	400 BC
Roman Civilization	0
Islamic Civilization	700 AD
Dark Ages	700 AD
Middle Ages (Medieval Period)	1100 AD
Renaissance	1400 AD
	Specific Date
Death of Socrates	399 BC
Birth of Christ	0
Constantine makes Christianity legal	313 AD
Birth of Mohammed	570 AD
Columbus Discovers America	1492 AD
Cortez conquers Mexico	1519 AD
Declaration of American Independence	1776 AD

Notes: *This task, along with the geography task of Unit 7, is supposed to provide a scaffolding in space and time for the construction of a system of knowledge. Therefore, during the discussions and lectures, I frequently ask the students to relate the subject*

under discussion to the members of these lists. This provides an essential opportunity for practice and review.

Some students can memorize this list in about 5 minutes, while others may require as many as 20 tests spread over several weeks before they master it. But, ALL students can successfully memorize it. For the students who memorize well, this task comes as a welcome opportunity for them to utilize, and have honored, a talent which is often denigrated in American schools. This is another example of how this course purposefully scrambles the normal ranking of academic skills and abilities, so as to give every student a chance to be among the best in the class.

Unit 16: THE INDUSTRIAL REVOLUTION

Basic idea: In England, capitalism, a broad world view, and a knowledge of thermodynamics, combined to produce dramatic changes in the techniques of manufacturing goods. These changes produced enormous wealth and unleashed enormous power.

Terms: 1) energy, 2) coal, 3) laws of thermodynamics, 4) Watt, 5) iron, 6) steam engine, 7) capitalism, 8) communism, 9) Dickens, 10) Darwin.

Task: Do some physics experiments based on techniques of measurement, conservation of momentum, and the concept of force.

Notes: *Most physics labs have lots of nifty equipment suitable for this task, the point is to be sure that both the abstract concept and the real-world measurement get equal attention.*

Unit 17: WAR AND TECHNOLOGY

Basic idea: War has always been a feature of civilization, and technological knowledge has always played an important part in determining how wars are fought and which side is victorious.

Terms: 1) trench warfare, 2) tank warfare, 3) air warfare, 4) sea warfare, 5) nuclear warfare, 6) WWI, 7) WWII, 8) covert operation, 9) spy satellite, 10) mutually assured destruction.

Task: Play a sandbox wargame at three levels of analysis:

1. "These are the men and equipment of your platoon. This is the village you will defend/attack."

2. "These are your divisions. This is the territory you will defend/attack."

3. "These are your armies. This is the country you will defend/attack."

Notes: *An army officer in uniform should be the judge of these games. The army has been very cooperative with me, even bringing their own equipment for the games. The army is an institution which craves honor and respect from the larger society, and therefore they are very supportive of any academic course which examines the intellectual requirements of war fighting.*

Teams are required here in order to get everyone involved, so it naturally follows that the teams should be organized in a military fashion.

Unit 18: MEDICINE AND POPULATION

Basic idea: Modern biological science has uncovered knowledge that has produced unprecedented improvements in medical and agricultural skills. These abilities have produced a population explosion which will cause enormous problems for our children.

Terms: 1) microbe, 2) Pasteur, 3) penicillin, 4) WHO, 5) artificial selection, 6) green revolution, 7) birth control pill, 8) abortion, 9) ZPG, 10) life expectancy.

Task: Kill a microbe under the microscope and watch it die.

Notes: *This task has three parts: 1) producing a rich culture of bacteria; 2) confirming that they are alive by observing the movement; 3) eliminating that movement by the addition of an antiseptic agent.*

While the lack of movement does not absolutely confirm death, it is sufficient to illustrate that bacteria are living creatures, sharing an ecological environment that includes human illness and death.

UNIT 19: EPISTEMOLOGY

Basic idea: There are various ways of knowing things, and various ways of expressing the truth. The experimental method answers questions of the form: what is the effect of x on y; while the correlational method answers questions of the form: How does x relate to y. However, some things, like the nonexistence of the Loch Ness Monster, are not, under any circumstances, knowable.

Terms: 1) experiment, 2) null hypothesis, 3) correlation, 4) cause and effect, 5) intuition, 6) belief, 7) precognition, 8) fantasy, 9) illusion 10) delusion.

Task: Participate in a moot court case and help determine the matters of fact as well as the guilt.

Notes: *I have a beautiful set of documents relating to a murder case produced by the Institute for Trial Lawyers which provides roles for the entire class as either legal staff, witnesses, or jury members. A local lawyer will likely volunteer to serve as judge.*

This task serves not only to illustrate the issue of "truth", but it also teaches the specifics of the legal system, and forcefully shows the power of social role.

UNIT 20: SOCIETY AND ITS POWER

Basic idea: The social organization of society is coherent and consistent, yet dynamic. It dominates much of everyday life, yet is so pervasive and traditional that it is difficult to objectively examine. All societies have long evolutionary histories and have powerful institutions to protect them from any radical change.

Terms: 1) social class, 2) legitimate authority, 3) prison, 4) mental institution, 5) social role, 6) norms, 7)conformity, 8) deviance, 9) subculture, 10)family.

Task: Visit a politician's office or the state penitentiary.

Notes: *This unit should be about the dominant culture and its institutions. A visit to the pen is a very informative experience which forces a consideration of the nature of our society. A visit to a politician's office is not as useful, since the politician will try to disguise the power of his office.*

UNIT 21: ALIENATION AND CULTURE

Basic idea: Subgroups form that are alienated from the dominant culture. They identify themselves with a distinctive dress style and a separate belief system. These groups, while generally short lived, are the cutting edge of cultural change.

Terms: 1) cult, 2) puchuco, 3) low rider, 4) punk, 5) hippy, 6) anxiety, 7) assimilation, 8) discrimination, 9) socialization, 10) ethnic group.

Task: Visit a subculture and write a description of your experience.

Notes: *In our area available subcultures include Sikhs, Penitenties, low-riders, Christian fundamentalists, and hippies, but other groups in other areas would serve as well. I can imagine subcultures based on ethnicity, such as Cambodian, on occupation, such as cowboys, or on habits, such as nudists.*

UNIT 22: MADNESS, MYSTICISM, AND MAGIC

Basic idea: Experience is purely subjective, and is true only with respect to a single individual human. Many valuable, important experiences in life are only understood through direct personal discovery, and cannot be taught to you through the words and actions of others.

Terms: 1) hedonism, 2) suffering, 3) love, 4) eroticism, 5) ecstasy, 6) insanity, 7) existentialism, 8) horror, 9) fantasy, 10) LSD

Task: Do a theater arts exercise, maybe a Stanislovski emotion exercise, or standing at the bottom of the stairs and shouting "Stella!".

Notes: *Setting the scene for an emotion laden situation, such as a death or eviction, and then encouraging improvisation can produce very successful results with this task. It is here that the bottled up creativity of my students was most spectacularly released. Of course a large, private rehearsal room that can accommodate a cast of about 10 is very helpful.*

UNIT 23: MATH AND THE DESCRIPTION OF REALITY

Basic idea: Mathematics is a true, logical system that exists outside ordinary reality and so is useful in describing and manipulating that reality.

Terms: 1) arithmetic, 2) algebra, 3) geometry, 4) calculus, 5) number line, 6) graph, 7) metric system, 8) truth table, 9) computer, 10) bit.

Task: Write a simple computer program, maybe one to find the average of list of numbers.

Notes: *For some students this task will be so easy, that they might elect to satisfy it by helping other students with the programming. Here as elsewhere it is necessary to balance the need to foster cooperation and group effort with the need to insure that each student successfully completes the task with his own mental effort.*

UNIT 24: LANGUAGE, COMMUNICATION AND SOCIAL REALITY

Basic idea: Language has two primary functions: the transfer of information and the creation of a social entity. Language also shapes and guides our perception of

reality.

Terms: 1) sign, 2) grammar, 3) syntax 4) alphabet, 5) ideogram, 6) etymology, 7) Indo-European language, 8) jargon, 9) slang

Task: Deduce the grammatical structure of an artificial language.

Notes: *I have some cartoons with a description of the action represented written below them in an artificial language. From the examples given, it is quite easy and fun to construct new grammatical sentences – especially when the teacher reinforces grammatically correct attempts.*

UNIT 25: LITERATURE AS MIRROR

Basic idea: Literature is a reflection of the writer and his culture, but also each reader can look into the text and see new aspects of himself and his own world.

Terms: 1) novel, 2) poetry, 3) prose, 4) short story, 5) plot, 6) character, 7) metaphor, 8) theme, 9) symbol, 10) dramatic conflict

Task: Read Hemingway's A Clean Well Lighted Place and write an analysis of the story.

UNIT 26: FORM AND DESIGN

Basic idea: The functional items made by any culture must have some form. The specific architectural or design decisions that are made express the intangible values, aspirations, history and philosophy of a people. Thus, a study of these forms gives a concrete system for understanding the hidden character of a culture.

Terms: 1) classical style, 2) Gothic, 3) baroque, 4) pueblo, 5) Islamic, 6) territorial 7) free form, 8) Bauhouse, 9) Art Deco, 10) vernacular.

Task: Go on an architectural tour of Northern New Mexico and locate specific examples of the following architectural styles. Show that you have personally observed each style by producing a photograph or a sketch of the building you found.

Western Civilization Styles	New Mexico Styles
Egyptian	Pueblo
Greek	Spanish Colonial
Roman	Territorial
Gothic	Neo-pueblo
International	California Mission
Modern	Santa Fe
Post Modern	

Notes: *With the possible exception of Egyptian style (we were forced to use the obelisks in our plazas) the Western Civilization styles should be available everywhere. Other regions will of course not have New Mexico styles, but a list relevant to local history can easily be constructed.*

UNIT 27: VISUAL ART AND SELF-EXPRESSION

Basic idea: People shape their environment in specific artistic ways so as to give visual expression to unspoken mysteries of experience.

Terms: 1) painting, 2) sculpture, 3) ceramic, 4) sandpainting, 5) realism, 6) abstraction, 7) color, 8) texture, 9) form, 10) perspective.

Task: Create a visual, artistic object and present it to the class. A drawing, painting, sculpture, video or collage is acceptable.

Notes: *Objects whose design and visual content are not the creation of the student, such as craft kits of various kinds, were disallowed, but original designs in traditional crafts such as needlepoint or knitting were acceptable.*

UNIT 28: TO DANCE AND SING

Basic idea: To explain why all people, in all cultures, from all times, dance and sing.

Terms: 1) rhythm, 2) harmony, 3) pop, 4) jazz, 5) rock, 6) classical music, 7) ritual dance, 8) folk dance, 9) modern dance, 10) ballet.

Task: Make music in a group, record it, listen to it, and play it again.

Notes: *A collection of percussion instruments and a quiet rehearsal hall can produce some very dramatic results. The lecture should certainly have some examples of musical styles and at least some effort at analysis.*

UNIT 29: ALL THE WORLD'S A STAGE

Basic idea: Drama, like literature and visual art, reflects the joys and sorrows of life. It uses special dramatic conventions that are understood by the audience to express fundamental truth. The central dramatic issue is man's conflict within himself and with his society.

Terms: 1) play, 2) opera, 3) cinema, 4) video, 5) comedy, 6) tragedy, 7) passion play, 8) protagonist, 9) villain, 10) Shakespeare.

Task: Purchase a ticket and attend a live dramatic production.

Notes: *I disallowed concerts, even rock concerts with a strong dramatic component, but did allow operas.*

UNIT 30: THE FUTURE

Basic idea: The world is constantly and dramatically changing within the span of one person's life. The student should be exposed to the obvious changes coming, and know that the decisions he takes now will determine his future.

Terms: 1) population explosion, 2) ecological crisis, 3) global climate change, 4) world famine, 5) technological explosion, 6) information explosion, 7) genetic engineering, 8) space migration, 9) extended life-span, 10) world government.

Task: Design a fallout shelter that would protect you from as many crisis as possible. Describe what equipment and supplies you would place in it.

Notes: *The purpose of the task is to encourage an examination of one's needs and values, not to confine the design to financially realizable projects.*

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